

# Lines of Descent: Of Umbilical Cords, Ancestors and Ahupua'a

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*This paper details the results of the 1989 and 1990 archaeological surveys in Hawai'i Volcanoes National Park in which over 700 petroglyphs were mapped and recorded for the first time. The geographic location of the petroglyphs was found to be along or on both currently defined ahupua'a boundaries (traditional Hawaiian land boundaries). This paper explores the significance of this finding and the importance of the god Lono in the arid region of the coastal Puna district where worship of this god of fertility and rain may have been linked to the piko<sup>1</sup> ritual which was performed at sites within the Park.*

Beginning in 1959, the National Park Service has conducted numerous surveys of the archaeological resources in the Puna-Ka'u Historic District of Hawai'i Volcanoes National Park (Emory, Soehren, and Ladd 1965; Ladd 1962, 1963, 1964, 1968, 1969, 1972a, 1972b, 1974, 1981; Ladefoged 1987; Ladefoged, Somers and Lane-Hamasaki 1987). In early 1988 a three-year program of systematic surveying was implemented due to the threat of lava from Kilauea Volcano (Carter and Somers 1990).

During the 1989 and 1990 surveys a total of fifteen 10-30 meter wide transects were surveyed. Six of these transects included over 700 petroglyphs which were identified and mapped for the first time. The geographic location of the petroglyphs was found to be along both known and suspected *ahupua'a* or *'ili* boundaries, bringing into question the possibility that these political boundaries may have changed over time.

## Previous Research

The most encompassing work on Hawaiian petroglyphs was written by Cox and Stasack in 1970. They summarize the incidence of petroglyphs in Hawai'i as follows:

- 1) Recording of trips and communication concerning other events, on trails, and at boundaries.
- 2) A concern for insuring long life and personal well-being.
- 3) The commemoration of events and legends.

Since 1970, many more petroglyphs have been found as identified in archaeological contract work around the islands. Most of these reports do not, however, attempt to interpret the petroglyphs, leaving a gap in our understanding of their symbolic and functional significance.

Recently, Lee (1989, 1990) surveyed the extensive fields at Puako in South Kohala, Hawai'i. Her interpretations of this site extend beyond a simple description of the motifs. She concludes that petroglyphs were created in a particular location because the area itself possessed ritual power. She also notes that many sections of *pahoehoe* were left untouched while other areas are extensively covered (Lee 1989:5).

These observations apply to the recently surveyed areas of the Puna district within Hawai'i Volcanoes National Park. There are many bare areas of smooth, level *pahoehoe* where no petroglyphs are found. Only certain specific areas were chosen by Hawaiian petroglyph carvers. Clearly, there exists

a set of circumstances or rules which Hawaiians conformed to in the act of carving petroglyphs at specific locations.

Ethnographic accounts written by early travelers in Hawai'i provide some valuable and insightful information regarding the function of petroglyphs. In 1823 William Ellis, a British missionary, happened upon some petroglyphs on his journey. These were circles and anthropomorphs found on trails. Ellis (1971:334) records these observations concerning petroglyphs in general:

Along the southern coast, both on the east and west sides, we frequently saw a number of straight lines, semicircles, or concentric rings, with some crude imitations of the human figure, cut or carved in the compact rocks of lava. The did not appear to have been cut with an iron instrument, but with a stone hatchet, or a stone less frangible than the rock on which they were portrayed.

On inquiry, we found that they had been made by former travellers, from a motive similar to that which induces a person to carve his initials on a stone or tree, or a traveler to record his name in an album, to inform his successors that he has been there.

When there was a number of concentric circles with a dot or mark in the center, the dot signified a man, and the number of rings denoted the number in the party who had circumambulated the island.

When there was a ring, and a number of marks, it denoted the same; the number of marks showing of how many the party consisted; and the ring, that they had travelled completely around the island; but when there was only a semicircle, it denoted that they had returned after reaching the place where it was made.

Hawaiians were also known to create petroglyphs in order to draw on the primal energy or *mana* of a specific area. Pu'uloa and Pu'u-mana-wale'a are both knolls (lava domes) located in the Puna district within Hawai'i Volcanoes National Park. Pu'uloa, or 'Hill-(of)-long-(life)' (Emory, *et al.*, 1959:13), represents the largest concentration of petroglyphs with a total number in excess of 15,000 motifs. Lee recently (1993) conducted an intensive survey of the petroglyphs at Pu'uloa. She suggests a date for that site as no earlier than A.D. 1200-1450, based on the age of the lava flow (Holcomb 1987:269; Ladefoged, *et al.*, 1987:4). However, Cox and Stasack (1970:61) state that "Pu'uloa, along with Puako, are the two oldest (petroglyph) sites in the island."

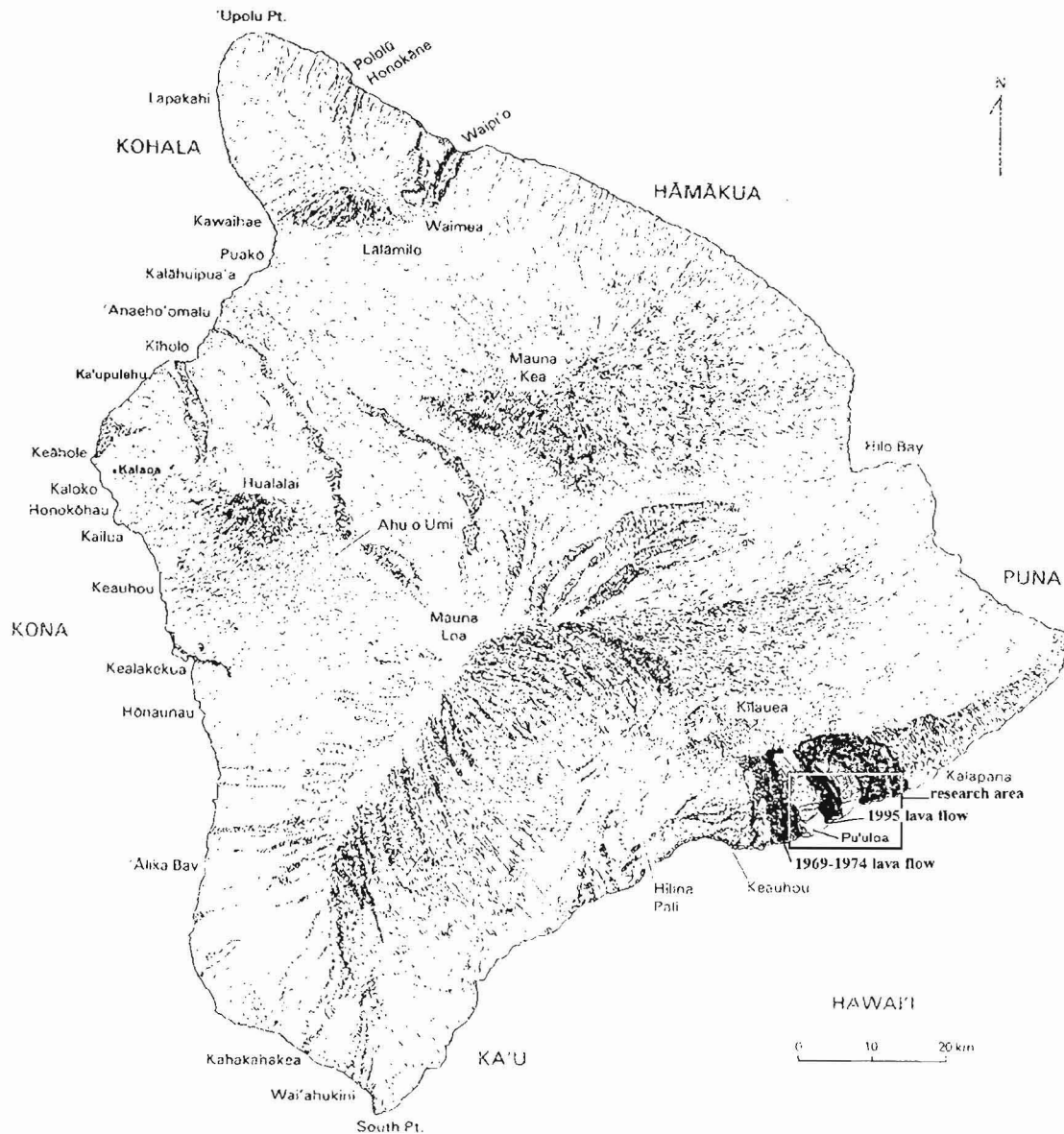


Figure 1. Map of the island of Hawai'i showing the location of the petroglyph sites described in this paper and including the location of the major site, Pu'uloa, and recent lava flows.

Pu'u-manawa-le'a, 'Hill of Rejoicing' (Emory, *et al.*, 1959:13) is located on the *ahupua'a* boundary between Kamoamoā and Lae'apuki. This knoll is associated with a legendary account from ca. A.D. 1525 (*ibid*:57) and has over 100 motifs. Both locations were thought to possess an abundance of *mana* and were favored spots for the *piko* ceremony.

Martha Beckwith collected ethnographic information from informants David Konanui and a Mrs. Kama in 1914 on a trip to Puna. Mrs. Kama, born in 1862, and a native of Kamoamoā, told Beckwith that her mother brought her umbilical cord there. Mrs. Kama had 15 children and for each one a visit was made to Pu'uloa. Pu'uloa was associated with long life and would account for a wish to visit the hill for the chance to live a long time (Emory, Soehren and Ladd 1965:8). Beckwith describes the ritual placement of the umbilical cord

as follows:

A hole is made in the hard crust, the cord is put in and a stone placed over it. In the morning the cord has disappeared; there is no trace of it. This insures long life to the child (Emory, *et al.*, 1959:56).

Upon close observation, the cup-shaped hollows carved into the *pahoehoe* surfaces at Pu'uloa and Pu'u-manawa-le'a seem to be much too shallow for placement of an umbilical cord. It seems likely that these depressions may have been more symbolic representations than functional for placement of the actual umbilicus. In fact "... it was usual to put such cords into natural deep crack or crevice." (*ibid*:9).

### Discussion

A diverse range of petroglyph motifs was identified within the survey area. These include anthropomorphic stick figures, cup-shaped hollows, circles, lines, historic lettering and a large

assortment of cryptic forms. Most of the petroglyphs were pecked, possibly with a small stone tool. The depth of the lines composing the petroglyphs varied from very shallow to very deep.

The geographic distribution of the petroglyphs in the survey areas was found to be remarkably consistent. Petroglyphs were generally found either along trails, known or suspected traditional political boundary lines (*ahupua'a* or '*ili*'), high tumulus knolls, or in caves. The knolls were invariably located along known or suspected traditional boundary lines and at the junction of an east-west trail (usually the Puna-Ka'u trail).

These political and geographic features appear to have had multiple functions. For instance *ahupua'a* boundaries, identified by a line of petroglyphs, also appear to have functioned as seaward-mountain (*makai-mauka*) trails. East-west trails lined with petroglyphs also functioned as

boundaries during specific times of use (e.g., during the Makahiki). Finally, petroglyph knolls were utilized as trail markers as well as *piko* ritual centers. The ritual use of these knolls appears to be associated with the desire of Hawaiians to imbue newborns with the spiritual qualities associated with the god Lono.

Kamoamoa/Pulama *ahupua'a* boundary (Transect 13); and 6). One petroglyph knoll (known as Pu'u-mana-wale'a) along the Lae'apuki/Kamoamoa *ahupua'a* boundary (Transect 14). (Figure 2).

It is likely that the high tumulus knolls functioned as *piko* ritual centers. In comparing the knolls discovered in the

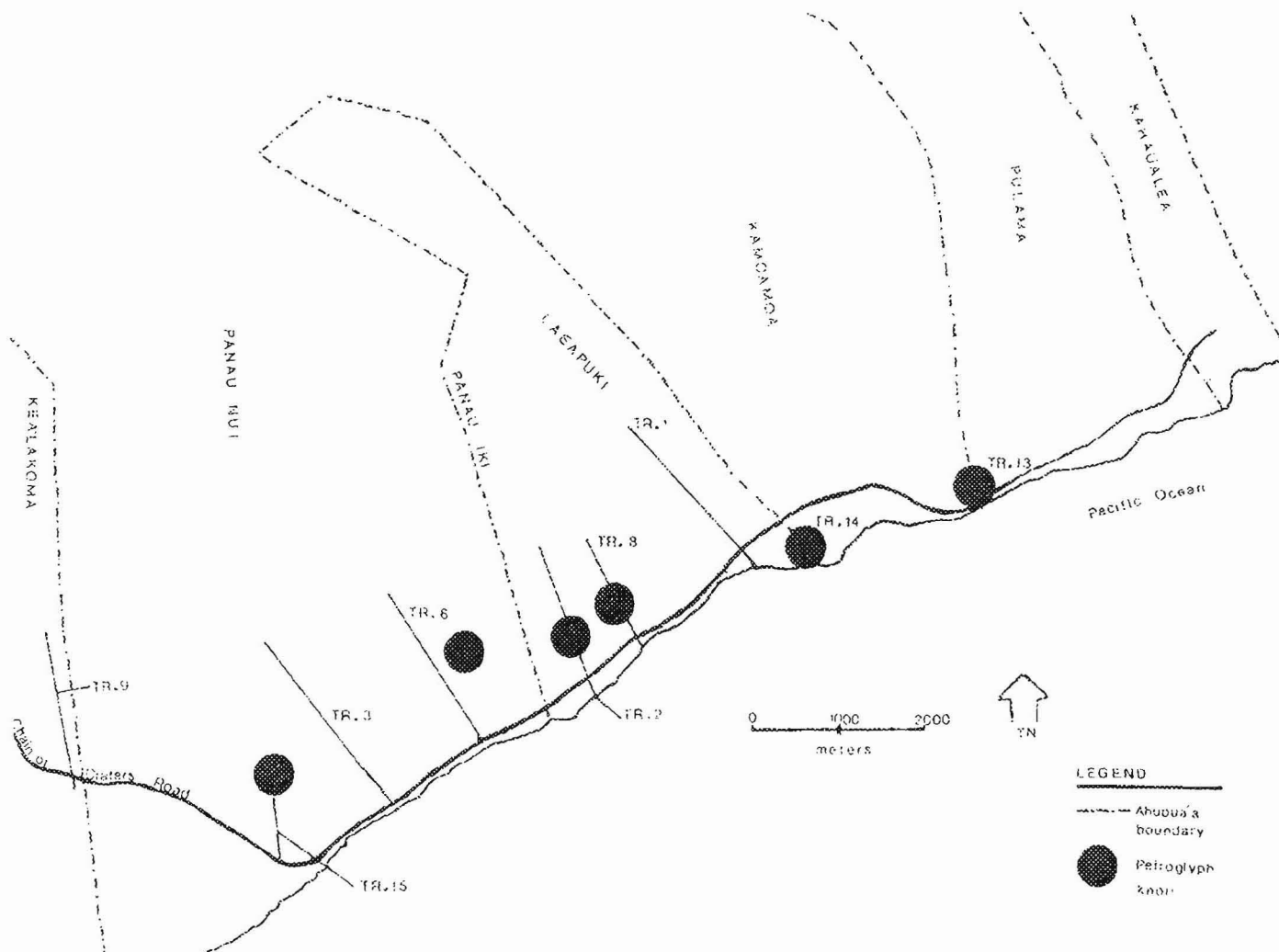


Figure 2. Transects within Hawai'i Volcanoes National Park

Lines of petroglyphs running *makai-mauka* and knolls with petroglyphs similar to those at Pu'uloa and Pu'u-mana-wale'a were found in the following locations:

- 1) A line of *makai-mauka* petroglyphs and one petroglyph knoll near the current Panau Nui-Panau Iki *ahupua'a* boundary (Transect 2);
- 2) Two knolls within the Panau-Nui *ahupua'a* boundary (Transect 6 and 15).
- 3) A line of *makai-mauka* petroglyphs and one petroglyph knoll along what may be the Panau-Iki/ Lae'apuki *ahupua'a* boundary (Transect 8);
- 4) A line of *makai-mauka* petroglyphs and one cave with an elaborate petroglyph panel just west of the Kealakomo and Panau-Nui *ahupua'a* boundary (Transect 9);
- 5) One petroglyph knoll along the current

1989 and 1990 surveys with the known *piko* ritual centers of Pu'uloa and Pu'u-mana-wale'a, the following similarities were noted:

- 1) The knolls are located in a high, prominent area; 2) petroglyphs are pecked along the surface, with cup-shaped hollows predominating; 3) a minimum of one *ahu* is located at each of the knolls; 4) the petroglyph knolls are located along known or suspected *ahupua'a* boundaries; 5) the Puna-Ka'u trail either transverses or is in very close proximity to the knolls.

Table 1 compares the total number of petroglyphs identified at each knoll with the known *piko* knoll of Pu'u-mana-wale'a located at the boundary between Lae'apuki and Kamoamoa. Note that the cup-shaped hollows predominate at each of the knolls.

The knolls at Transects 6 and 8 may also be located along traditional *ahupua'a* or 'ili lines. *Ahupua'a* have not remained entirely static and probably changed with the usurpation of a district by warring chiefs and the subsequent redistribution of land. As noted by Sahlins, the Makahiki is the dramatization of this usurpation:

"At the great Makahiki festival, the concept of political usurpation is set in the context of a cosmological drama. The lost god-chief Lono returns to renew the fertility of the land, reclaiming it as his own, to be superseded again by the ruling chief and the sacrificial cult of Ku." (Sahlins 1981:17).

Somers (1991) emphasizes the importance of geological change in the political structure of Hawai'i. *Ahupua'a* boundaries may have changed as the result of lava flows that made large areas uninhabitable or unproductive for agriculture. The realignment and reallocation of land may have been a common and necessary part of living on an island with an active volcano.

The Panau and Lae'apuki *ahupua'a* within the Puna district of Hawai'i Volcanoes National Park are known to have undergone some division since William Ellis visited those areas in 1823. Interviews conducted in the 1950s by Mary Pukui with older Hawaiians familiar with the region (Joseph Ilala'ole, Gabriel Pe'a, Maria Roberts, and Samuel Konaunui) revealed that names of *ahupua'a* in Ellis' account of 1823 (Pulama, Kamoamo, Laepuki [Lae'apuki], Panau [Panau], Kearakomo [Kealakomo], and Apua seem to have undergone some subdivision. The *ahupua'a* of Pulama apparently has been divided into Pulama and Puopou, and Lae'apuki into Lae'apuki and Panau-Iki, or Panau into Panau-Nui and Panau-Iki (Emory *et al.*, 1959:12).

The uncertainty about the exact location of previous *ahupua'a* or later 'ili subdivisions leaves open the possibility that the location of all the boundaries is not presently known. It is significant that the knolls located at Transects 6 and 8 are within the Panau or Lae'apuki *ahupua'a* where subdividing has in fact occurred.

Transects 6 and 8 then may represent *ahupua'a* or later 'ili subdivisions. The 'ili line between Panau-Iki and Lae'apuki is not located on any current maps and is probably represented by the line of petroglyphs discovered along Transect 8.

Pu'uloa may also be located on a previous *ahupua'a* boundary. At the present time the site is a considerable distance from the Kealakomo/Panau-Nui *ahupua'a* line. However, that may not have always been the case. Martha Beckwith made a curious observation in her journal concerning her trip to Pu'uloa on July 1, 1914. She wrote that she "rode out to Pu'uloa on the line between Kealakomo and Apuki." (Emory *et al.*, 1965:6). In this statement the term "line" may indicate that Pu'uloa was indeed along a boundary line.

It appears that *ahupua'a* boundaries were significant areas for the performance of rituals such as the *piko* ceremony. The line of petroglyphs at Transects 2 and 8 further suggests the importance of designating the exact location of the *ahupua'a*

boundaries.

*Ahupua'a* were tracts of land controlled by land managers (*konohiki*). These regions of lands were economically self sufficient and the families ('*ohana*) of each *ahupua'a* subsisted on the resources within them. Strict *kapu* (taboo) prevented people from crossing the *ahupua'a* boundaries (Apple 1973:22-25). Cox and Stasack (1970:25) relate that "... *kapu* controls on trespass stipulated that passing over a boundary could take place only on an established foot trail and most likely on only one such trail."

These *kapu* as well as the separate chiefly control of *ahupua'a* may partly explain the importance of the boundaries and the petroglyphs marking them. The following is a summary of *ahupua'a* by Wise:

Each large district was again cut into smaller sections known as *ahupuaas*. The name was derived from the *ahu* or altar which was erected at the district boundary line and on which the yearly payments were made at the time of the Makahiki. On this altar was also placed a small image of a pig or *puaa*. . . . A typical *ahupuaa* was a long narrow strip running from the sea to the mountain. . . .

People living in one *ahupuaa* had a right to use what grew there. They could gather pili grass and olona. They could fish in the waters off their districts. Their rights extended to the boundaries of the *ahupuaa* and no further. If there were breakers, it was considered that the *ahupuaa* extended to them. If there were no breakers, it was considered that the *ahupuaa* extended a mile and a half out to sea. If the *ahupuaa* did not extend to the sea, the inhabitants of that district were barred from all in-shore fishing, and must go out to the deep waters for their fish.

No person could cross the boundaries of the *ahupuaa* to take anything. This being the case, it was important that the boundaries be well known. Frequently the boundary was a ridge or a depression or stream. But it might be the line of growth of a certain tree or herb or grass, or the home of a certain bird. . . .

Certain people were trained in knowledge of different boundaries. This knowledge was passed on from generation to generation. When disputes arose, or when a man was accused of trespass, these experts were called in to settle the questions (Wise in Apple 1973:22).

These 'experts', to which Wise refers, may also have been trained in the making of petroglyphs. Since the location of the boundaries was so important, it would have been all the more reason to clearly mark their position. A line of petroglyphs carved into solid rock along a boundary, like those found at Transects 2 and 8 would leave an indelible record of the boundary location unlike an *ahu* which is susceptible to removal or destruction.

The *piko* holes carved into the surface of the *ahupua'a* boundary knolls may have a dual function as boundary markers. The following is the definition of *piko* as put forth by Pukui, Haertig and Lee (1972:182):

*Piko*--umbilical cord or umbilicus; genital organs; posterior fontanel or crown of the head; summit or peak. Many other meanings. Many connote attachment;



relationships with one's ancestors and descendants: boundary line of adjacent lands; junction of plant leaf to stem.

The word '*piko*' thus conveys a variety of meanings including a boundary with adjacent lands and an attachment with one's ancestors. The multifarious meanings of *piko* as well as the specific location of the *piko* imbues a deeper significance to the ritual beyond insuring a child of a long life.

Table 1.  
Total Number of Petroglyphs at Knolls

Petroglyph Type	Transect Number				Pu'u- mana-wale'a
Transect	2	6	8	13	14
Cup shaped hollows	35	185	158	21	310
Circles		31	39	1	10
Circles with central hollow	1	18	13		5
Circles with multiple central hollows or circles		3			1
Semi-circles	2		4	1	11
Semi-circles with central hollow		8	2	6	2
Lines	5	8	38		19
Anthropomorphic	1	8	4		8
Anthro showing action		3			2
Cryptic	1	6		4	5
Lono		3	1	1	1
Inscriptions	1		3		4
Square with or without central hollows			1		
Square of multiple hollows			1		
Feet			2		
Total	46	273	266	34	378

In addition, Pu'uloa is the only knoll that goes by this name (hill-of-long-life), implying that the others may not have imparted this same kind of meaning.

The petroglyph knolls undoubtedly functioned as collection areas for taxes during the Makahiki festival. David Malo (1987:145-146) describes the Makahiki festival in some detail and relates the period when taxes were levied along the *ahupua'a* boundaries:

17. On Lauupau (the twentieth day), the levying of taxes was completed, and the property that had been collected was displayed before the gods (*hoomoe ia*); and on the

following day (Olekukahi), the king distributed it among the chiefs and the companies of soldiery throughout the land.

31. This tax for the Makahiki god consisted of such things as feathers of the o-o, mamo, and iwi; swine; tapa; and bundles of pounded taro (*paiai*) to serve as food for those who carried the idol. On the large districts a heavy tax was imposed, and on the smaller one a lighter tax. If the tax of

any district was not ready in time, the *konohiki* was put off his land by the tax collector. The *konohiki* was expected to have all the taxes of the district collected beforehand and deposited at the border of the *ahupua'a* where was built an altar.

The petroglyphs on the knolls may also be linked to the Makahiki festival. Anthropomorphic figures, cryptic forms as well as Lono figures unrelated to the *piko* ceremony are found along with the *piko*. Lee (1993:11) mentions a possible Lono figure recorded at Pu'uloa.

Many of the anthropomorphic figures are involved in some kind of action perhaps pertaining to the sports activities performed at each *ahupua'a* boundary (Cox and Stasack 1970:32). Cox and Stasack further describe the link between the Makahiki festival altar, petroglyphs and coastal trails:

Petroglyphs on trails may have still other origins and functions. They may have some connection with the Makahiki activities. It was the boundaries of the *ahupua'a* on the coastal trails that the pig-altars for the Makahiki ceremony were located. Some petroglyphs that are near the boundaries served to indicate to the traveler that another *ahupua'a* or district was beginning at this point. In other words they may mark the boundary as well as marking the trail. The crossing of some boundaries may have 'required' the making of a petroglyph by the traveler. The ritual would be similar in meaning to many such acts that are known to have been the normal pattern in ancient Hawai'i (Cox and Stasack 1970:28).

The Puna-Ka'u trail connects with Pu'uloa and the petroglyph knolls at Transect 2, 6 and 8. A more coastal trail connects the petroglyph knolls at the boundary between Pulama and Kamoamoa and Lae 'apuki and Kamoamoa. It is likely that these

trail portions connect at some point and that the trail was traveled by the Makahiki procession in prehistoric times.

During the Makahiki festival, many of the *kapu* generally followed were no longer in effect but the area between the Makahiki trail and the ocean was *kapu* (Malo 1987:146). Thus the trail itself functioned as a temporary boundary line.

The line of petroglyphs at Transects 2 and 8 may also have functioned as trails. The areas along the boundary lines were discovered to be much easier to traverse than the rougher surrounding terrain.

A series of seaward to mountain trails in Lapakahi,

Hawai'i, North Kohala were also found to function as boundaries. According to Rosendahl (1972:118):

Both the patterned archaeological remains and the historic survey and land grant documents supported the interpretation of major trails as land unit boundaries and minor trails as access routes through field units.

### Lono and the Piko Ceremony

Petroglyph knolls may have functioned as both *piko* ritual centers and tax collection areas during the Makahiki festival with Lono as the focal point for both. Lono, the god of the Makahiki festival, has been variously described as the god of non-irrigated agriculture, fertility, medicine, and birth (Valeri 1985:15). Lono was worshipped in isolation for a four month period which coincided with the islands' rainy season. In traditional Hawaiian thought, Lono was considered to be responsible for the coming of the rains.

Lono was undoubtedly a very important deity in the dry, coastal regions of both Puna and Ka'u districts where streams and perennial waterways are rare. The sweet potato and gourd crops grown in these areas were entirely dependent on seasonal rains associated with Lono (Handy and Handy 1972:229).

Rain clouds were referred to in chants as "bodies (*kino*) of Lono". The sweet potato, whose culture on the semi-arid *kula* (lower slopes) of the volcano's flanks in Ka'u and Kona was dependent upon the winter rains, was identified with Lono in his hog form as Kamapua'a (hog-child). As noted by Handy and Handy (*ibid.*), the Lono festival probably originated on the island of Hawai'i as it "was in Kona that Lono was believed to have lived in ancient times". As a generative god, Lono was extremely important in assuring the fertility of the land and the coming of the winter rains.

Valeri (1985:214) explains Lono's role as the reproductive god and asserts that he is a universal father image with the associated names Lonomakua or "Lono the father" and "Lono the provider". Valeri (*ibid.*:221) notes that "Lono is the generative god situated at the beginning of the reproductive process of the year."

Marshall Sahlins (1991) describes the process in which Lono is 'ritually fed' in the course of his yearly island circuit. At that time, high ranking women would pay homage to Lono and appeal to his "gift of fertility, that they might bear a sacred child". Valeri (1985:113), in a discussion concerning ritual sacrifice notes that in a rare case of female predicated sacrifice, women gave the gift of a pig in order to 'obtain children' from Lono. In this way, the child is imbued with supernatural powers of the god both through female reproduction and through sacrifice:

In brief, both genealogy and sacrifice make it possible to create human replicas of the divine, but they create these replicas in different and yet complimentary ways. The genealogical connection with the gods, allows a couple to produce a child who is a replica of a god as ancestor (*ibid.*:114).

Thus women appealed to Lono for his generative influence in creating a child and performed the *piko* ritual along *ahupua'a* boundaries (the domain of Lono) to imbue the newborn with powers or attributes associated with Lono.

As noted by Sahlins, the hope of imbuing a newborn with divine characteristics assured the fertility of the land and connections with the divine and allowed for the continued allocation of land to this divine ancestral line.

The mating with the god is, again, an aspect of the complex *ima haku* 'to find a lord'. In the system of periodic land redistribution, a family without chiefly connections could look forward only to progressive decline in status, property rights and access and wealth. For each new chief put his own people in charge, potentially leaving the favorites of his predecessors to sink into the body of the commonalty (Sahlins 1981:40).

### Conclusions

Hawaiian petroglyphs were not idle markings, nor were they created for purely aesthetic reasons. Petroglyphs had symbolic as well as functional significance. The petroglyphs discovered during the 1989 and 1990 surveys in Hawai'i Volcanoes National Park fit well into the functional model proposed by Cox and Stasack. However, this model does not include all of the petroglyph uses identified within the Park. The motifs which were discovered along the 1989 and 1990 Transects conformed to a specific geographic distribution giving clues to their importance in rituals performed at *ahupua'a* boundaries.

The large number of diverse motifs and cup-shaped hollows seen at the knolls on Transects 2, 6, 8 and 13, 14 attests to the symbolic and functional importance of knolls on *ahupua'a* boundaries. The knolls may have served a number of purposes such as tax collection areas during the Makahiki, ritual centers for the *piko* ceremony, and markers for the *ahupua'a* boundary.

Petroglyphs noted along *ahupua'a* or 'ili lines appear to have functioned as boundary markers. The motifs were generally anthropomorphic stick figures placed in open and obvious spots to clearly mark the lines. These boundaries may also have been trails. Lee (1993:13) notes that Pu'u'loa has similarities with the 'Anaeho'omalua site, the latter of which is located on an *ahupua'a* boundary. Both sites have trails, and "both feature circles and dots. . . ." (*ibid.*).

The Puna-Ka'u trail probably functioned as the Makahiki route that crossed the *ahupua'a* boundaries. This was certainly the case during the Makahiki festival when the area between the Makahiki trail and the coast was *kapu*. Petroglyphs noted along these trails may have served simply to mark the trail or to define the trail as a boundary.

A knoll with numerous cup-shaped hollows was discovered at each of the *ahupua'a* boundaries. The added importance of Lono in the *piko* ceremony may reveal more complex implications for the ritual as a whole. However, other areas of Hawai'i need to be investigated before a definitive trend can be established. It would be very

interesting to analyze other *ahupua'a* boundaries and associated petroglyphs on the island of Hawai'i to determine if they exhibit similar characteristics to those discovered within the confines of Hawai'i Volcanoes National Park.

- 1 The piko ceremony assured long life for a child and involved placing the umbilical stump and cord into a crevice or pecked depression and covering it with a stone.

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